

SECTION 3

FLOODPLAIN FORESTS

VII. Floodplain Forests

Floodplain forests are wetlands dominated by mature, deciduous hardwood trees growing on alluvial soils associated with riverine systems. The soils are inundated during flood events, but are usually somewhat well-drained for much of the growing season (Shaw and Fredine 1971). The most characteristic feature of floodplains is the alluvial soil that is constantly being deposited in some locations and eroded away in others. Floodplain forests typically include the northern and southern wet-mesic hardwood forest associations described by Curtis (1971). Dominant hardwoods include silver maple, green ash, river birch, swamp white oak, plains cottonwood, American elm and black willow. The shrub layer is typically sparse to lacking because of frequent flooding. Woody vines are more prevalent in floodplain forests than any other forested wetland community. Examples include wild grape, Virginia creeper and moonseed. The herbaceous groundlayer can be sparse and include jewelweed, nettles and certain sedges. In some cases, reed canary grass has invaded and formed a monotypic groundlayer.

Floodplain forests have a great diversity of plant and animal species because they serve as migration corridors. Some of the many species of wildlife that inhabit floodplain forests are wood duck, barred owl, herons, egrets and a variety of songbirds. Pools within the forest provide habitat for amphibians and invertebrates, while adjoining areas of open sand provide habitat for reptiles. During high water periods, these forests even provide habitat for fish.

Floodplain forests are extremely important for floodwater storage. Diking and filling of floodplain forests to allow development or agricultural use can aggravate both upstream and downstream flooding impacts.

VEGETATION: The floodplain forest shown by the following two photographs is dominated by silver maple (*Acer saccharinum*) with a groundlayer dominated by wood nettle (*Laportea canadensis*) and honewort (*Cryptotaenia canadensis*). Also present are green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), plains cottonwood (*Populus deltoides* ssp. *monilifera*), riverbank grape (*Vitis riparia*), common bur sedge (*Carex grayi*), jewelweed (*Impatiens capensis*), stinging nettle (*Urtica dioica*), clearweed (*Pilea pumila*) and cut-leaved coneflower (*Rudbeckia laciniata*).

SOILS: Calco silt loam, frequently flooded (Cumulic Endoaquolls). Landscape position is the floor of a deep valley within the Paleozoic Plateau of southeastern Minnesota.

HYDROLOGY: Adjacent to the Cannon River and inundated during spring flood events and heavy summer rainfall events.

LOCATION: Cannon River, Goodhue County, Minnesota.

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April



August

Two seasonal views of a floodplain forest at approximately the same location. The first photograph shows high water conditions during spring flooding; the second photograph shows low water levels during late summer.

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FLOODPLAIN FORESTS



SILVER MAPLE

(*Acer saccharinum* L.)

MAPLE FAMILY (Aceraceae)

C of C: Native (2)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A deciduous tree growing to a height of 12-18(37) m. The leaves are opposite and deeply 5-lobed with a narrow terminal leaf base. Leaves are green above and silvery white below with petioles that are usually green. The twigs and buds are reddish. The bark is gray and smooth in young trees, becoming flaky (peeling) with age. Fruit is a winged samara 3.5-5.5(6) cm. long, which falls in May and June. One of the first trees to flower -- usually in February (southern Wisconsin) to March, although sometimes as late as April.

Similar to red maple (*A. rubrum*). See the discussion of that species on page 327.

ECOLOGICAL NOTES: Silver maple, or soft maple, is one of the dominant trees in our floodplain forests, frequently associated with green ash (*Fraxinus pennsylvanica*), plains cottonwood (*Populus deltoides* ssp. *monilifera*) and American elm (*Ulmus americana*). It is the most flood tolerant of our tree species. Silver maple is also found in hardwood swamps, especially in southeastern Wisconsin. It is frequently used for landscaping purposes as a shade tree.

SOURCE: Fernald (1970); Petrides (1972); and Voss (1985).

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GREEN ASH

(*Fraxinus pennsylvanica* Marsh.)

OLIVE FAMILY (Oleaceae)

C of C: Native (2)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A deciduous tree growing to a height of 25 m. Leaves are opposite and compound. The leaflets number 5-9 (usually 7) and are toothed, slightly petioled and 4-5 cm. long. The leaf scars are in a half circle. Branches are smooth and round, or nearly so. The bark is furrowed in a very tight, regular diamond pattern of crisscrossing ridges. Fruit is a wedge-shaped samara with a round or somewhat round body and a flat wing. In flower April-May.

ECOLOGICAL NOTES: Green ash is commonly associated with floodplain forests and, to a much lesser extent, hardwood swamps. However, it is also found in rich upland habitats. Green ash is frequently used for landscaping purposes.

SOURCE: Gleason and Cronquist (1991); Petrides (1972); and Swink and Wilhelm (1994).

FLOODPLAIN FORESTS



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AMERICAN ELM

(*Ulmus americana* L.)

ELM FAMILY (Ulmaceae)

C of C: Native (3)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A deciduous tree growing to 40 m. in height, with a characteristic vase-shaped growth form. The leaves are alternate, doubly serrate, elliptical to oblong-ovate, 8-14 cm. long, and nearly smooth to very rough above. Leaf veins are arranged in a characteristic herringbone pattern. Mature trees have dark gray bark with ridges separated by roughly diamond-shaped areas. The flowers develop in spring before the leaves unfold. Fruit is a wafer-like samara 1 cm. long that falls in May. In flower March-May.

ECOLOGICAL NOTES: American elm used to be one of the primary dominants of the floodplain forests of Minnesota and Wisconsin; however, these populations have been decimated by Dutch elm disease, which is caused by an introduced fungus transmitted by bark beetles. American elm is also found in hardwood swamps and rich upland forests. In the past, American elm was extensively used for landscaping but Dutch elm disease has ravaged those populations as well.

SOURCE: Brockman (1979); Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

FLOODPLAIN FORESTS



Vase-shaped growth form is characteristic.



Outer bark has alternating red and white layers.

American Elm
(*Ulmus americana*)

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SWAMP WHITE OAK

(*Quercus bicolor* Willd.)

BEECH FAMILY (Fagaceae)

C of C: Native (8)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A large, deciduous tree to 24 m. in height and 70 cm. in dbh. Bark of mature trees is gray or brownish gray, thick, with ridges separated by deep furrows. Leaf blades are 10-19 cm. long and 7-11 cm. wide. Leaves have 3-9 small to midsize rounded lobes, the deepest sinuses extending 15-50 percent of the distance to the midvein. Upper leaf surfaces are dark green, glossy, and glabrous or glabrate. Lower leaf surfaces are pale green or grayish, dull, and densely hairy with minute, appressed, star-like hairs mixed with longer, erect hairs. Flowers are unisexual and borne separately on the same branch. Male flowers are in pendulant catkins 2-8 cm. long. Female flowers are number 1-3 on a long peduncle. Fruit is an acorn 1.7-2.4 cm. long and 1.3-1.7 cm. wide where the cup covers 50-65 percent of the total length of the acorn. Acorns are on a long stalk (peduncle) 3-7 cm. long. In flower in May with fruit maturing in late August to late September.

Swamp white oak resembles bur oak (*Q. macrocarpa*), but the leaves have smaller and more uniform lobes. The acorns of swamp white oak are on long stalks and lack a fringe of hairs, as opposed to the short-stalked, fringed acorns of bur oak.

ECOLOGICAL NOTES: Swamp white oak is a characteristic species of floodplain forests. In Minnesota it is restricted to the Mississippi River floodplain in the very southeastern portion of the state. Swamp white oak occurs in larger river floodplains across southern Wisconsin.

SOURCE: Gleason and Cronquist (1991); and Smith (2008).



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Unlike other oak species in our area, the acorns of swamp white oak are on long stalks (3-7 cm. long).

FLOODPLAIN FORESTS

Leaves are “bicolor” in that the upper and lower surfaces have different color and texture. Shown here with immature acorns on the characteristic long stalk.



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Swamp White Oak
(*Quercus bicolor*)

FLOODPLAIN FORESTS



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BLACK WILLOW

(*Salix nigra* Marsh.)

WILLOW FAMILY (Salicaceae)

C of C: Native (4)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A deciduous tree growing to a height of 20 m. or more; frequently with several trunks. Trunks are often leaning or horizontal to the water or ground surface. Leaves are alternate, narrowly lanceolate, 6-10(12) cm. long and serrulate. Both sides of leaves are green; upper side of the leaf is darker green than the lower. The bark of mature trees is flaky, heavily ridged and dark brown to black. The catkins, 2.5-7 cm. long, are borne among new leaves from April to June.

ECOLOGICAL NOTES: A common willow of floodplain forests; it is also found along streambanks, ditches and berms.

SOURCE: Brockman (1979); Fernald (1970); and Gleason and Cronquist (1991).

FLOODPLAIN FORESTS



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Black Willow (*Salix nigra*)

**Unlike other tree-size willow species in our area,
the leaves of black willow are green on both sides.**



FLOODPLAIN FORESTS



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WHITECRACK WILLOW

(*Salix x rubens* Schrank)

WILLOW FAMILY (Salicaceae)

C of C: Introduced (0)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A large, deciduous tree with 1-5 upright or leaning trunks to 30 m. in height and 116 cm. dbh. Bark is gray or gray brown with deep furrows and coarse ridges. First- and second-year branchlets are yellow to yellowish-brown or yellowish-green. Petioles are 6-18 mm. long, usually with enlarged glandular dots or lobes at the summit. Leaves are elliptical to lanceolate and 7-15 cm. long and 1.3-3 cm. wide with an apex that is acuminate to caudate. Upper leaf surfaces are dark green, shiny or dull, and glabrous or nearly so. Lower leaf surfaces are pale green or pale blue-green, dull and glabrous or nearly so. Immature leaves are reddish or yellowish green and covered with long, silky hairs at first, then becoming glabrous. Male catkins are 3.5-6.5 cm. long while female catkins are 5-9 cm. long. Capsules are glabrous and 4-6 mm. long. In flower in early May to early June.

ECOLOGICAL NOTES: Whitecrack willow has been long mistaken for the native peach-leaved willow (*S. amygdaloides*) and non-native white willow (*S. alba*). It is actually a hybrid of two European species, white willow and crack willow (*S. fragilis*). Whitecrack willow was widely planted by early European settlers and has escaped to the extent that today it is a common tree of floodplains and streambanks. See Smith (2008) for a key to distinguish between these tree-sized willow species.

SOURCE: Gleason and Cronquist (1991); and Smith (2008).

FLOODPLAIN FORESTS



Leaves and pistillate catkins.

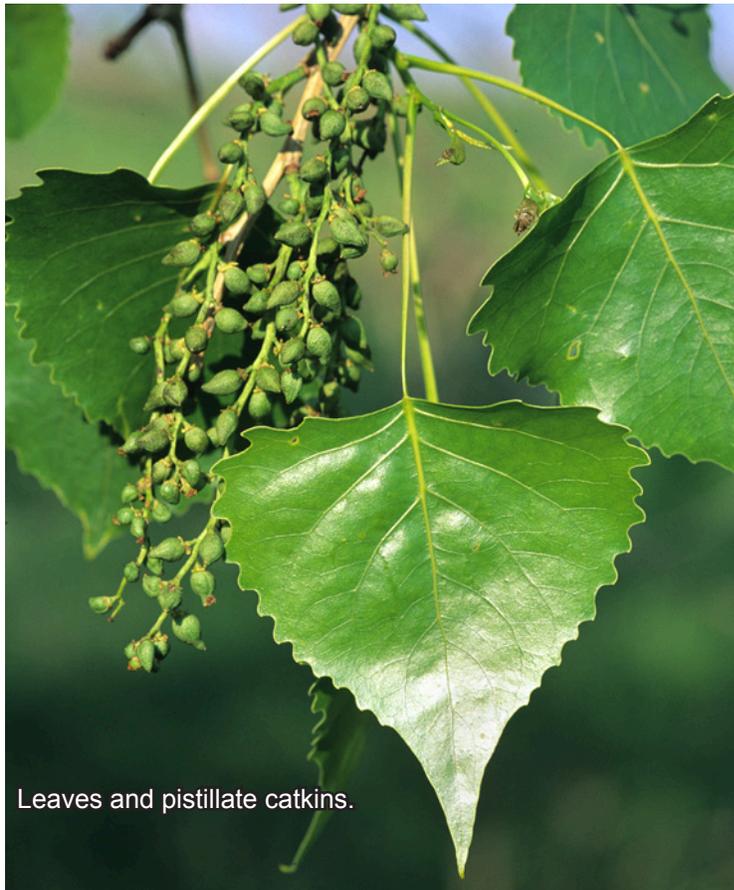


Leaves and staminate catkins.

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Whitecrack Willow (*Salix x rubens*)

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Leaves and pistillate catkins.



Staminate catkin.

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PLAINS COTTONWOOD

(*Populus deltoides* Marsh. ssp. *monilifera* (Ait.) Eckenw.)

WILLOW FAMILY (Salicaceae)

C of C: Native (1 MN)(2 WI)

IND. STATUS: FAC

FIELD CHARACTERISTICS: The largest deciduous tree in Minnesota and Wisconsin, growing to a height of 30 m. or more, and 1-1.3 m. in diameter. The leaves are broadly triangular (deltoid-shaped, as in the species name) with flattened petioles and serrate margins. Leaves are 8-14 cm. long and have glands at the base. The bark of mature trees is deeply furrowed and dark gray. The flowers are in catkins. Multitudes of short-lived, minute seeds with cottony hairs are produced that can be blown for long distances. In flower April-May.

ECOLOGICAL NOTES: Plains cottonwood is a common tree of floodplain forests and streambanks, and is also found in uplands. It is typically a pioneering species of disturbed sites such as berms, ditches and quarries. Eastern cottonwood (*P. deltoides* ssp. *deltoides*) is closely related but occurs south and east of Minnesota and Wisconsin (Smith 2008).

SOURCE: Brockman (1979); Fernald (1970); Gleason and Cronquist (1991); and Swink and Wilhelm (1994).

FLOODPLAIN FORESTS



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RIVER BIRCH

(*Betula nigra* L.)

BIRCH FAMILY (Betulaceae)

C of C: Native (6)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A deciduous tree growing to 30 m. in height. The bark can be reddish to brown to black, and peels in curled strips. The leaves are alternate and irregularly oval to triangular-oval, 4-8 cm. long, pale beneath, and the margins of upper portions are doubly serrate, while the lower margins are shallowly lobed. Catkins are 1.5-3 cm. long. The pistillate catkins are cone-like and disintegrate when ripe. Staminate catkins form in summer and open the following spring. In flower April-May. Similar to yellow birch (*B. alleghaniensis*) [page 328] but yellow birch leaves are not doubly serrate. Additionally, the twigs/bark of yellow birch have the scent of wintergreen, which river birch lacks.

ECOLOGICAL NOTES: River birch is found in floodplain forests and hardwood swamps. Its preferred germination sites are sandbars exposed after spring floods have receded.

SOURCE: Brockman (1979); Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1985).

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BOX ELDER

(*Acer negundo* L.)

MAPLE FAMILY (Aceraceae)

C of C: Native (1 MN)(0 WI)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A deciduous tree growing to a height of 20 m. The compound leaves are opposite with 3 to 5 (rarely 7) irregularly serrated to shallowly lobed leaflets. The moderately stout, smooth twigs are greenish to purple with a pale waxy coating. The older bark is a gray to light brown color with deep furrows. Fruit is a winged samara 3.0-4.5 cm. long which falls in September to October. In flower from early April to late May.

ECOLOGICAL NOTES: Box elder, as known as ash-leaved maple, is an abundantly common species of streambanks and floodplains. It is also a frequent, pioneering species of disturbed habitats on moist alluvial soils, fertile soils of vacant urban parcels, and abandoned agricultural lands.

SOURCE: Gleason and Cronquist (1991); Petrides (1986); Swink and Wilhelm (1994); and Voss (1985).

FLOODPLAIN FORESTS



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BUTTONBUSH

(*Cephalanthus occidentalis* L.)

MADDER FAMILY (Rubiaceae)

C of C: Native (7)

IND. STATUS: OBL

FIELD CHARACTERISTICS: A multiple-stemmed, deciduous, tall shrub to 5 m. in height and 10 cm. dbh. Bark is gray or brown and flaking with age. First-year branchlets are glabrous and greenish to greenish brown. Second-year branchlets are brown to gray-brown with whitish lenticels. Leaves are simple, opposite or occasionally in whorls of 3. Blades are entire, ovate to ovate-oblong or elliptical, 7-14 cm. long and 3-7 cm. wide. Upper leaf surfaces are dark green, glabrous and glossy; lower leaf surfaces are pale green and sparsely hairy on the main veins. The inflorescence is a tight, spherical cluster of 100-200 flowers, each cluster 2-3 cm. in diameter. Flowers are bisexual, with flower parts in 4s. Flowers are white or greenish, tubular and 8-12 mm. long. Fruit is a brown, cone-shaped nutlet 5-8 mm. long that matures in September-October. In flower late June to early August.

ECOLOGICAL NOTES: Buttonbush is a characteristic species of floodplains as it is very tolerant of flooding and sedimentation. However, it is relatively shade-intolerant and prefers edges or openings within the floodplain forest. It has a wide range across the eastern U.S. but only extends into eastern Minnesota along the St. Croix and Mississippi River floodplains. In Wisconsin, it occurs in larger river floodplains across the southern half of the state.

SOURCE: Gleason and Cronquist (1991); and Smith (2008).

FLOODPLAIN FORESTS



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INDIGO BUSH

(*Amorpha fruticosa* L.)

BEAN FAMILY (Fabaceae or Leguminosae) **C of C:** Native (6) **IND. STATUS:** FACW

FIELD CHARACTERISTICS: An erect, perennial, deciduous, branching shrub up to about 4 m. tall. It has alternate pinnately (feather-like) compound leaves with 4-10 or more pairs of green leaflets, 2-4.5 cm. long. The leaflets are dotted with green sessile glands beneath. Petioles are typically pubescent. The purple flowers are arranged in (1)2 to several dense racemes, 6-20 cm. long. The fruit is a glandular pod, 5-9 mm. long by 2-4.5 mm. wide. In flower June-July.

ECOLOGICAL NOTES: Indigo bush is a riparian plant of streambanks, floodplains and lakeshores. It occasionally occurs in moist upland woods. It is very common along the Mississippi River.

SOURCE: Gleason and Cronquist (1991); Smith (2008); Swink and Wilhelm (1994); and Voss (1985).

FLOODPLAIN FORESTS



© Photos by Steve D. Eggers



Aerial roots.

COMMON POISON IVY

(*Toxicodendron radicans* (L.) Kuntze ssp. *negundo* (Greene) Gillis)

CASHEW FAMILY (Anacardiaceae) **C of C:** Native (7 MN)(4 WI) **IND. STATUS:** FAC

SYNONYM: *Rhus radicans* L.

FIELD CHARACTERISTICS: A branching, deciduous shrub to 3 m. in height, or vines climbing to 20 m. in length. Stem diameters to 3-6 cm. with grayish to brown bark. The vine form is characterized by numerous aerial roots attached to host tree trunks (inset photo: aerial roots are the copper-colored, fiber-like structures). The alternate, compound leaves are in trifoliate (3 leaflet) clusters. Leaflets are entire to few toothed or shallowly lobed, 3-12(15) cm. long, with one pair of lateral leaflets. The terminal leaflet is supported by a long petiole. Mature leaflets are shiny, ovate and dark green. Immature leaflets range from reddish in spring to light green. The yellowish- to greenish-white flowers occur on ± ascending axillary panicles. The grayish-white, berry-like fruit is a spherical drupe 4-5 mm. in diameter. The resin, called urushiol and which occurs throughout the plant, can cause a severe allergic contact dermatitis.

ECOLOGICAL NOTES: Common poison ivy is very frequent in floodplain forests, especially along the Mississippi and Wisconsin Rivers. In addition, it occurs in a wide variety of habitats ranging from open sand dunes to upland fields, thickets and forests. The fruits are used as a winter food by a variety of birds and other wildlife, which aids in seed dispersal.

SOURCE: Gleason and Cronquist (1991); Smith (2008); Swink and Wilhelm (1994); and Voss (1985).

FLOODPLAIN FORESTS



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RIVERBANK GRAPE

(*Vitis riparia* Michx.)

GRAPE FAMILY (Vitaceae)

C of C: Native (2)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A perennial, deciduous, high-climbing, woody vine. Mature bark is shredding and peeling. The stem pith is interrupted at the nodes by diaphragms up to 9.8 mm. thick. Tendrils are present. The simple leaves are opposite, rotund, 10-20 cm., with usually 3 forward pointing lobes. Leaf margins are coarse and sharply serrated. Young leaf blades tend to be pubescent underneath. As they mature, the undersides become green and glabrous with tufts of pubescent hairs between the veins. Panicles are 5-10 cm. long. Blue-black fruits are 6-12 mm. in diameter with a waxy bloom (glaucous) at maturity.

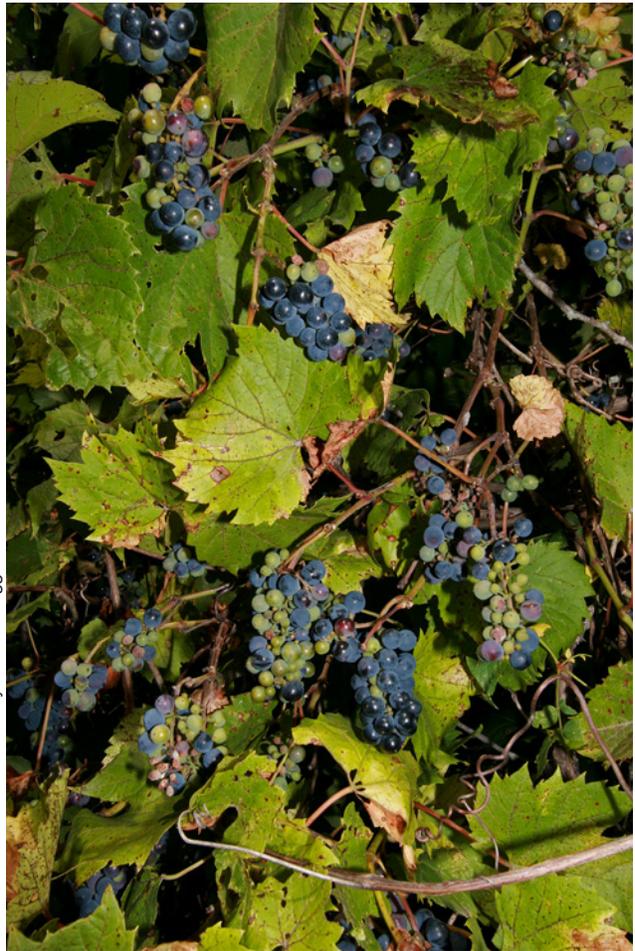
ECOLOGICAL NOTES: Riverbank grape is common in floodplain forests, wooded swamps, shrub swamps, along riverbanks, fence rows, upland forests and on sandy shores and dunes.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1985).

FLOODPLAIN FORESTS



Flowers are in elongate panicles.



© Photos by Steve D. Eggers

Fruit matures in late July to early September.



Bark peels in long, linear strips.

Riverbank Grape
(Vitis riparia)

FLOODPLAIN FORESTS



Leaves of three leave it be!



© Photos by Steve D. Eggers

Fruit matures late August to late September, often held over winter.

WESTERN POISON IVY

(*Toxicodendron rydbergii* (Small) Green)

CASHEW FAMILY (Anacardiaceae) **C of C:** Native (1 MN)(2 WI) **IND. STATUS:** FAC

SYNONYM: *Rhus radicans* L. var. *rydbergii* (Small) Rehd.

FIELD CHARACTERISTICS: A low, deciduous shrub to 2 m. in height and 2 cm. diameter that lacks aerial roots and has little, if any, branching. Bark is smooth and gray while branchlets are brown. Leaves are alternate, deciduous and compound with 3 leaflets. Leaflets are ovate to broadly-ovate, 8-13 cm. long by 4-9.5 cm. wide, with round to obtusely-angled bases. Leaf margins have irregular and coarse or blunt teeth. Inflorescence is a erect panicle from leaf axils. Flowers are functionally unisexual, in 5 parts, with whitish flowers 1.5-3 mm. long. Fruit is a spherical drupe, whitish to pale yellowish green, and 4.5-6 mm. in diameter. In flower in June.

ECOLOGICAL NOTES: Western poison ivy is found throughout both Minnesota and Wisconsin in a wide variety of habitats except those that are permanently wet. It is primarily a forest species but also spreads to native prairies, sand dunes, road ditches and even manicured lawns adjacent to forests.

SOURCE: Gleason and Cronquist (1991); Smith (2008); Swink and Wilhelm (1994).

FLOODPLAIN FORESTS



Autumn colors.

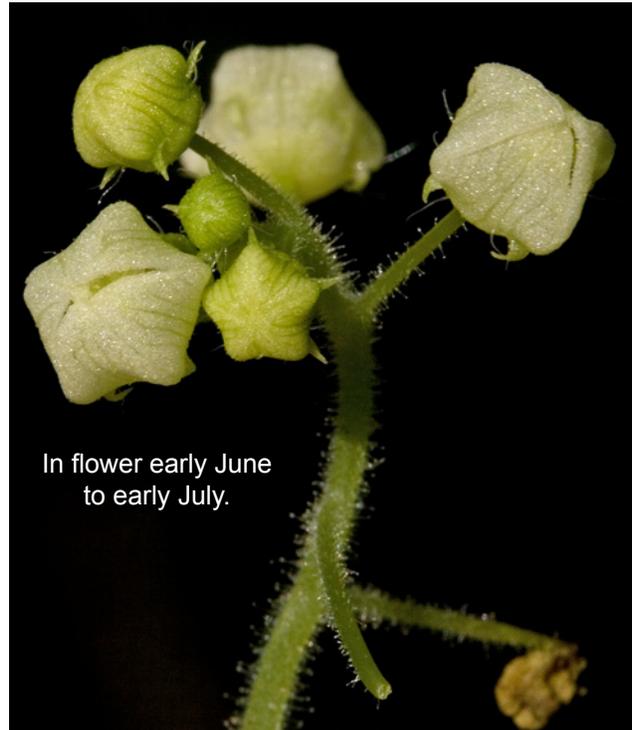
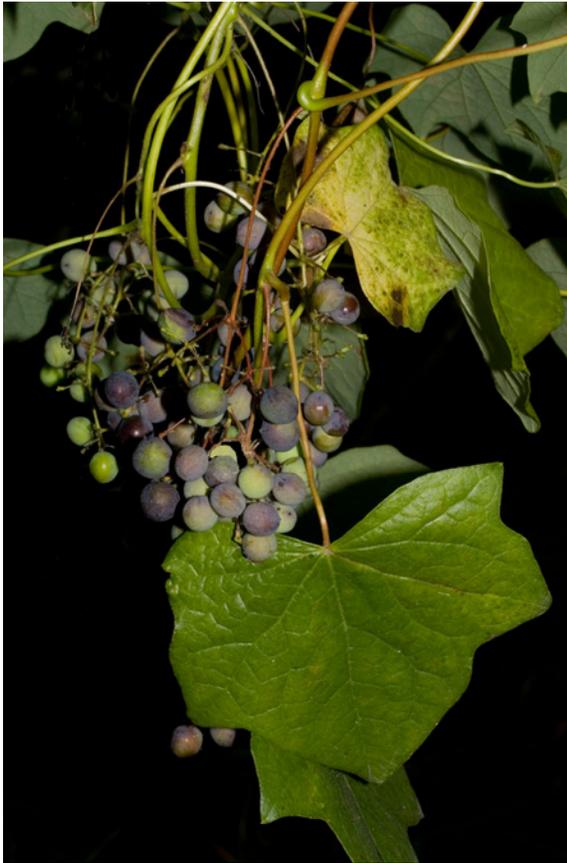


© Photos by Steve D. Eggers

In flower early to late June.

Western Poison Ivy
(*Toxicodendron rydbergii*)

FLOODPLAIN FORESTS



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MOONSEED

(*Menispermum canadense* L.)

MOONSEED FAMILY (Menispermaceae)

IND. STATUS: FAC

C of C: Native (4 MN)(5 WI)

FIELD CHARACTERISTICS: A climbing vine with twining stems to 10 m. in height and 2 cm. in diameter. Bark is green to brown. Leaves are simple and alternate with blades that are reniform to broadly ovate. Blades are 4-18 cm. long and 6-22 cm. wide with a cordate base. Leaf margins have 1-3 pairs of shallow, blunt lobes. Upper leaf surfaces are dark green and sparsely hairy while lower leaf surfaces are pale green and sparsely hairy. Flowers are unisexual, whitish to greenish, and borne in axillary panicles of 15-50. In flower early June to early July. Fruit is a glabrous, bluish black drupe 9-13 mm. in diameter. It matures in mid-August to early October.

ECOLOGICAL NOTES: Moonseed is a common vine of floodplain forests and mesic (upland) hardwood forests. It has the ability to survive in deep shade, but prefers sunny edges and partial openings in the forest canopy.

SOURCE: Gleason and Cronquist (1991); and Smith (2008).



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HOG PEANUT

(*Amphicarpaea bracteata* (L.) Fernald)

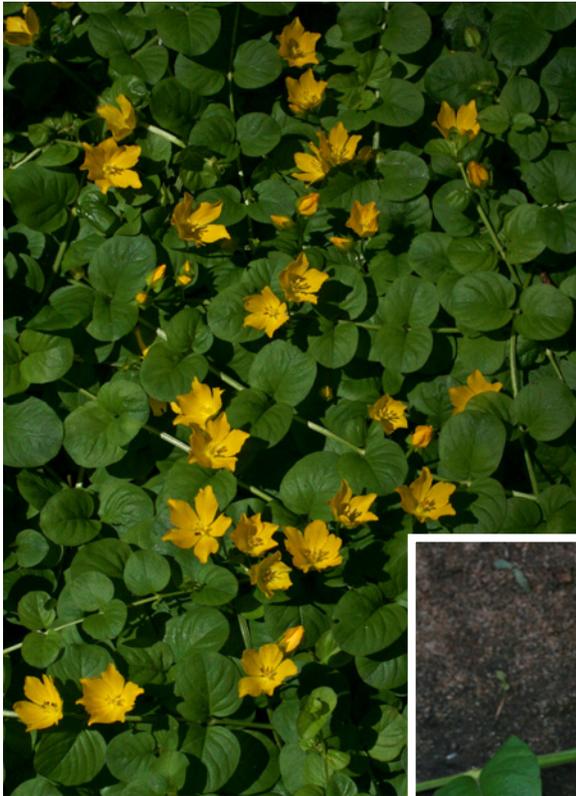
BEAN FAMILY (Fabaceae or Leguminosae) **C of C:** Native (2 MN)(5 WI) **IND. STATUS:** FAC

FIELD CHARACTERISTICS: An annual, twining vine to 1.5 m. long. Leaves are composed of 3 leaflets each of which are 2-8 cm. long, ovate and broadly rounded at the base. Inflorescence has a long peduncle from a leaf axil and includes 2 to many pale purplish to whitish, 5-parted flowers that are 12-18 mm. long. Fruit is a pod usually with 3 seeds. In addition, some branches at the base of the stem develop small, 1-seeded, often subterranean, fruits. In flower August-September.

ECOLOGICAL NOTES: Hog peanut is a common species of hardwood swamps, shrub-carrs and inland fresh meadows as well as mesic (upland) forests and meadows.

SOURCE: Gleason and Cronquist (1991); and Black and Judziewicz (2009).

FLOODPLAIN FORESTS



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MONEYWORT

(*Lysimachia nummularia* L.)

PRIMROSE FAMILY (Primulaceae)

C of C: Introduced (0)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A perennial, creeping, mat-forming herb with stems to 50-60 cm. long. Leaves are opposite, dotted with black glands, round or oval and 1-2.5 cm. long. Flowers are single in leaf axils on petioles to 2.5 cm. long. Sepals are triangular in shape and 6-8 mm. long. Petals are yellow, dotted with dark red and 10-15 mm. long. Fruit is a capsule. In flower June-August.

ECOLOGICAL NOTES: Moneywort is a native of Europe that escaped from cultivation and is potentially invasive in our region. It occurs in a variety of shaded, wet habitats, especially floodplain forests.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Chadde (2002).

FLOODPLAIN FORESTS



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CUT-LEAVED CONEFLOWER

(*Rudbeckia laciniata* L.)

ASTER FAMILY (Compositae or Asteraceae)

IND. STATUS: FACW

C of C: Native (6 WI)(4 MN)

FIELD CHARACTERISTICS: A perennial herb 0.5-3 m. in height. Stems are glabrous and often glaucous. Leaves are alternate, up to 30 cm. wide, and deeply lobed (lacerated). Leaf margins are coarsely toothed to lobed. The inflorescence consists of multiple flower heads, which have both ray and disc flowers. Ray flowers are lemon-yellow while disc flowers are green-yellow. Ray flowers are 3-6 cm. long. Fruit is a 4-angled achene. In flower July-September.

ECOLOGICAL NOTES: Cut-leaved coneflower is a characteristic species of floodplain forests and streambanks typically growing in full or partial shade. A garden cultivar known as goldenglow, which has all or most of the disc flowers converted to ray flowers, occasionally escapes to the wild.

SOURCE: Gleason and Cronquist (1991); Chadde (2002); Swink and Wilhelm (1994); and Voss (1996).

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CARDINAL FLOWER

(Lobelia cardinalis L.)

LOBELIA FAMILY (Lobeliaceae)

C of C: Native (7)

IND. STATUS: OBL

FIELD CHARACTERISTICS: A perennial herb that usually has a simple stem growing to a height of 50-150 cm. The leaves are thin, smooth, dark green, lanceolate to lance-ovate, and irregularly serrate. The racemes are terminal and 1-4 dm. long. Flowers are intense scarlet-red and 3-4 cm. long. In flower July-September.

ECOLOGICAL NOTES: Cardinal flower is found in floodplain forests, fresh (wet) meadows and along streambanks.

SOURCE: Fernald (1970); and Gleason and Cronquist (1991).

FLOODPLAIN FORESTS



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CANADA ANEMONE

(*Anemone canadensis* L.)

BUTTERCUP FAMILY (Ranunculaceae) **C of C:** Native (3 MN)(4 WI) **IND. STATUS:** FACW

FIELD CHARACTERISTICS: A perennial herb from rhizomes often forming large patches. Stems grow to 10-60 cm. in height. Leaves are all from the base and have long petioles with the exception of 2-3 leafy, sessile bracts below the flower. Leaves from the base are 4-15 cm. wide and deeply palmately-divided into 3-5 toothed segments. The white flowers are 2-5 cm. long usually with 5 petal-like sepals (but can be 4- to 20-parted) that are 1-2 cm. long. Stamens and pistils are many. Nutlets are clustered in a semi-round head. Nutlets are hairy, 3-5 mm. long with a beak 2-4 mm. in length. In flower May-August.

ECOLOGICAL NOTES: Canada anemone is frequent in floodplain forests, fresh (wet) meadows and along streambanks.

SOURCE: Chadde (2002); Black and Judziewicz (2009) and Gleason and Cronquist (1991).

FLOODPLAIN FORESTS



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WHITE AVENS

(*Geum canadense* Jacq.)

ROSE FAMILY (Rosaceae)

C of C: Native (2)

IND. STATUS: FAC

FIELD CHARACTERISTICS: A perennial herb with slender stems 40-100 cm. tall. Basal leaves with long petioles and mostly 3 obovate leaflets. Stem leaves mostly shorter petioled with more oblong-lanceolate to rhombic leaflets. Flowers have 5 white petals, which are nearly as long as the sepals, or longer. Head of fruits is obovoid and 10-15 mm. long. Fruit is a dry seed with a hook. In flower May-June.

ECOLOGICAL NOTES: White avens is a common forb of the shaded habitats of floodplain forests, high spots in hardwood swamps, and mesic (upland) forests.

SOURCE: Gleason and Cronquist (1991).

FLOODPLAIN FORESTS



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WOOD NETTLE

(*Laportea canadensis* (L.) Wedd.)

NETTLE FAMILY (Urticaceae)

C of C: Native (3 MN)(4 WI)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A perennial herb 50-100 cm. in height. The alternate leaves are broadly ovate, 8-15 cm. long, coarsely serrate and hairy. Staminate flowers are in cymes from the lower axils. Pistillate flowers are in loose, elongate, spreading cymes from the upper axils. In flower July-September.

ECOLOGICAL NOTES: Wood nettle is an abundant and characteristic species of floodplain forests. It also occurs along streambanks and in rich, mesic (upland) forests. The stinging hairs can cause a severe rash.

SOURCE: Gleason and Cronquist (1991).

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STINGING NETTLE

(*Urtica dioica* L. ssp. *gracilis*)

NETTLE FAMILY (Urticaceae)

C of C: Native (1)

IND. STATUS: FAC

SYNONYMS: Numerous including *U. gracilis* Ait., *U. procera* Muhl.

FIELD CHARACTERISTICS: A tall, slender, tough-stemmed perennial herb growing to 2 m. in height. The stems are square and coarse. Leaves are opposite, stalked, heart-shaped at the base, serrate and 5-15 cm. long. Glassy stinging hairs are present on the stem and/or leaves. Greenish flowers emerge from the leaf axils. Fruit is a nutlet 1.5 mm. long. In flower June-September.

ECOLOGICAL NOTES: Stinging nettle is found in floodplain forests, along streambanks, and on dredged spoils. It is a frequent invader of disturbed or drained organic soils of inland fresh meadows, especially after fires. Stinging nettle can also occur in pastured upland woods. Skin contact with the stinging hairs of this species can be very irritating.

SOURCE: Fernald (1970); Gleason and Cronquist (1991); Voss (1985); Swink and Wilhelm (1994); and Great Plains Flora Association (1991).

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FALSE NETTLE

(*Boehmeria cylindrica* (L.) Swartz)

NETTLE FAMILY (Urticaceae)

C of C: Native (5 MN)(6 WI)

IND. STATUS: OBL

FIELD CHARACTERISTICS: An erect, perennial, nettle-like herb up to 60 (100) cm. tall that lacks stinging hairs. The ovate leaves are opposite, coarsely toothed and have long petioles. Minute, four-parted greenish flowers occur in dense clusters along an unbranched cylindrical spike. The distinct flowering spikes are opposite and arise from the herb's leaf axils. In flower July-August.

ECOLOGICAL NOTES: False nettle is most often found in wooded swamps and on the wet alluvial soils of floodplain forests. It occasionally occurs at the edges of marshes and bogs.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1985).

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CANADIAN CLEARWEED

(*Pilea pumila* (L.) A. Gray)

NETTLE FAMILY (Urticaceae)

C of C: Native (3)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A typically small annual, nettle-like herb that lacks stinging hairs, up to 50 cm. tall. It often forms small colonies. Stems are translucent and fleshy. The shiny ovate leaves are opposite, usually glabrous, have blunt toothed margins, and long petioles. Four-parted flowers occur on loose, spreading branched panicles. Nutlets are pale green to yellowish, smooth, and ≤ 1.0 mm. wide. The nutlets of the very similar bog clearweed (*Pilea fontana*) are dark olive to blackish purple, warty, and ≥ 1.1 mm. wide. In flower July-September.

ECOLOGICAL NOTES: Canadian clearweed commonly occurs in the shaded habitats of rich, wetland forests including floodplain forests. Bog clearweed tends to occur in slightly wetter, springy habitats and in bogs.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1985).

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HONEWORT

(*Cryptotaenia canadensis* (L.) DC)

CARROT FAMILY (Umbelliferae or Apiaceae)

IND. STATUS: FAC

C of C: Native (3 MN)(4 WI)

FIELD CHARACTERISTICS: A glabrous, branching, perennial herb with stems 30-80 cm. in height. Leaves are trifoliate, the lower leaves on long petioles. Leaflets are lanceolate to rhomboid or ovate and 4-15 cm. long with sharply and irregularly serrated or lobed margins. Compound umbels with unequal rays and tiny, white flowers are produced. The fruit is lance-linear in shape and 5-8 mm. long. In flower June-July.

ECOLOGICAL NOTES: Honewort commonly occurs in floodplain forests as well as rich, mesic (upland) forests.

SOURCE: Gleason and Cronquist (1991).

FLOODPLAIN FORESTS



VIRGINIA WILD RYE

(*Elymus virginicus* L.)

GRASS FAMILY (Gramineae or Poaceae) **C of C:** Native (4 MN)(6 WI) **IND. STATUS:** FACW

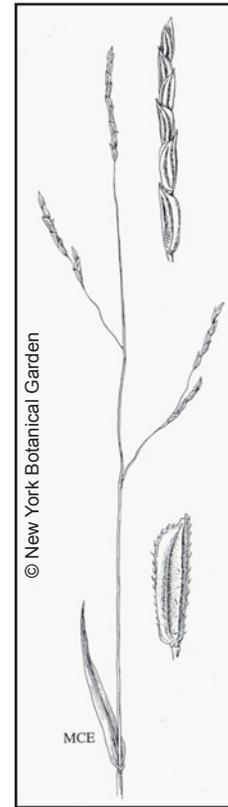
FIELD CHARACTERISTICS: A tufted, perennial grass to 50-120 cm. in height. Leaves are flat, 4-10 mm. wide and scabrous on both sides. Inflorescence is rigidly erect, 4-12(16) cm. long, often included in the summit of the uppermost leaf sheath. Spikelets are mostly paired and 2-4(5) flowered. Glumes are 10-30 mm. overall, 0.8-2 mm. wide and bowed out at the base. Lemmas are 6-9 mm. in length usually with a long, straight awn up to 10 mm. in length, but sometimes awnless.

Riverbank wild rye (*Elymus riparia*) is very similar but the inflorescence is nodding; lemmas have awns longer than 10 mm.; and glumes are 0.4-0.8 mm. wide and not bowed out at the base. It occurs in similar habitats often preferring more sandy soils.

ECOLOGICAL NOTES: Virginia wild rye is a common species of floodplain forests and stream-banks.

SOURCE: Gleason and Cronquist (1991); Crow and Hellquist (2000); Swink and Wilhelm (1994); and Voss (1972).

FLOODPLAIN FORESTS



WHITE GRASS

(*Leersia virginica* Willd.)

GRASS FAMILY (Gramineae or Poaceae)

C of C: Native (5)

IND. STATUS: FACW

FIELD CHARACTERISTICS: A perennial grass spreading from rhizomes and reaching 50-120 cm. in height. Stems are slender and weak, often reclining at the base and rooting at nodes. Leaves are rough-hairy but not scabrous to the degree of rice cut-grass (*L. oryzoides*). Leaves are 5-20 cm. long by 5-15 mm. wide with a short, flat-topped ligule. Inflorescence is an open panicle 10-20 cm. long and stiffly spreading. Spikelets are 1-flowered, oblong, overlapping, 3 mm. long by 1 mm. wide, with stiff hairs. Glumes are absent. Lemmas are 3-4 mm. long and sparsely hairy.

ECOLOGICAL NOTES: White grass is a frequent species of floodplain forests and streambanks. An additional habitat is shaded depressions in mesic hardwood forests.

SOURCE: Gleason and Cronquist (1991) and Chadde (2002).

FLOODPLAIN FORESTS



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COMMON BUR SEDGE

(*Carex grayi* Carey)

SEDGE FAMILY (Cyperaceae)

C of C: Native (8 MN)(7 WI)

IND. STATUS: FACW

FIELD CHARACTERISTICS: One of our more distinctive perennial sedges. Stems are 30-90 cm. tall, solitary or form small clusters. Basal sheaths are tinted a purplish-red. Mature leaves are 4-11 mm. wide. The solitary terminal spikelet supports staminate flowers. The 1 or 2 pistillate spikelets are densely globular, with (7)10-35 perigynia radiating in all directions. The lance shaped perigynia are 12.5-20 mm. by 4-8 mm., strongly nerved, with bidentate teeth. The beak is shorter than the body. Perigynia may be pubescent.

ECOLOGICAL NOTES: Common bur sedge, also known as Gray's sedge, prefers floodplain forests. It also occurs along the edges of vernal pools.

SOURCE: Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1972).

FLOODPLAIN FORESTS



SWAMP OVAL (MUSKINGUM) SEDGE

(*Carex muskingumensis* Schwein.)

SEDGE FAMILY (Cyperaceae)

C of C: Native (7)

IND. STATUS: OBL

FIELD CHARACTERISTICS: A perennial, clump-forming sedge with stout rhizomes and several conspicuous leafy stems. Fertile stems are 50-100 cm. tall. Sheaths are green-veined on the ventral (inner) side. Main leaves are 3-5 mm. wide. Five to 10 spindle-shaped, sessile spikes are tapered to points at both ends forming dense clusters about 1-2 cm. long. The perigynia are thin, scale-like, incurved, and lance-shaped, 6-10 mm. long with thin marginal wings. The tapering beak is deeply bidentate. Nutlets are narrow, lens-shaped and about 2 mm. long.

This sedge is very similar to *Carex scoparia*, but larger and more robust. The vegetative form of the sedge may initially be confused with *Carex trichocarpa*.

ECOLOGICAL NOTES: Swamp oval sedge is characteristic of the floodplain forests of major river bottoms. It also occurs in wet meadows. It is very common along the Mississippi River.

SOURCE: Fassett (1976); Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1972).

FLOODPLAIN FORESTS



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CATTAIL SEDGE (*Carex typhina* Michx.)

SEDGE FAMILY (Cyperaceae)

IND. STATUS: OBL

C of C: Native (9), a species of special concern in Minnesota

FIELD CHARACTERISTICS: A very distinct, clumped perennial sedge with stems about 30-80 cm. tall. The main leaves are 5-10 mm. wide. The 1-3(6) spikelets are on short peduncles subtended by a short bract. The uppermost spikelet is mostly pistillate with a short staminate portion at the base. Lateral spikelets are all pistillate. Spikelets are 2-4 cm. long and distinctly ovoid-cylindric. Pistillate scales are acute, but blunt and awnless at the tip, and hidden by the perigynia. Perigynia are (4)5.5-6(8) mm. long, smooth, abruptly beaked, dense (30-60 per spikelet), inflated and appressed-ascending. The concave nutlets are about twice as long as wide with an essentially straight, deciduous style.

ECOLOGICAL NOTES: Cattail sedge is typically found in floodplain forests, including Mississippi River bottomlands downstream of St. Paul, Minnesota, as well as hardwood swamps.

SOURCE: Fassett (1976); Gleason and Cronquist (1991); Swink and Wilhelm (1994); and Voss (1972).